

Divisional of 09/670,153

Claims pending following amendment

What is claimed is:

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1. An isolated nucleotide sequence comprising the SBMu200 gene.
2. An isolated nucleotide sequence that mediates male fertility in plants comprising a nucleotide sequence encoding any of the amino acid sequences of SEQ ID Nos.2, 4 or 8 and those sequences which hybridize to the nucleotide sequences encoding any of the amino acid sequences of SEQ ID Nos. 2 , 4 or 8 under highly stringent conditions.

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3. An isolated DNA molecule that mediates fertility in plants comprising a nucleotide sequence of any of SEQ ID Nos.1, 3, or 7 and those sequences which hybridize to the nucleotide sequences of SEQ ID Nos. 1, 3, or 7 under highly stringent conditions.

4. A plant cell transformed by the nucleotide sequence of Claim 1.

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5. A plant cell transformed by the nucleotide sequence of Claim 2.

6. A plant cell transformed by the nucleotide sequence of Claim 3.

7. A plant transformed by a nucleotide sequence of Claim 1.

8. A plant transformed by a nucleotide sequence of Claim 2.

9. A plant transformed by a nucleotide sequence of Claim 3.

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10. The plant of Claim 7 wherein the plant is maize.

11. The plant cell of Claim 4 wherein the cell is a maize cell.

12. A method of impacting fertility of a plant comprising impacting the SBMu200 gene.

13. A method of impacting fertility of a plant comprising impacting a nucleotide sequence in the plant encoding the amino acid sequence of any of SEQ ID Nos 2, 4 or 8 the nucleotide sequences of any of SEQ. ID Nos. 1, 3, or 7 and those sequences which hybridize to any of said sequences under highly stringent conditions.

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14. The method of Claim 12 wherein the sequence expression is repressed.

15. The method of Claim 12 wherein expression of the nucleotide sequence is repressed by mutation of the nucleotide sequence.

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19. A method of producing hybrid seed, comprising: (a)planting in cross-pollinating juxtaposition, a first seed from a selected male fertile parent line and a second seed

selected from a female parent line having male sterility produced according to the method of Claim 12; (b) growing the seed to mature plants under conditions which do not induce expression of the second DNA molecule; (c) cross-pollinating the male sterile female plant with pollen from the male fertile plant; and (d) harvesting seed

5 from the male sterile female plant.

20. The method of claim 19 further comprising cross-fertilizing the male sterile plant with a second plant, the second plant comprising a second exogenous gene, the product of the second gene preventing disruption of the male tissue by the first exogenous gene, producing a male fertile hybrid plant.

10 21. The method of claim 19 wherein the gene impacting male fertility is dominant and further comprising growing the hybrid seed to produce a third male sterile parent plant; producing a fourth parent plant comprising one or more genes controlling a desired gene trait and cross-fertilizing the third and fourth parent plants to produce second hybrid seed.

15 22. A male fertility mediated plant produced according to the method of Claim 12.

27. An expression vector comprising a the DNA sequence of Claim 1.

28. The expression vector of claim 27 further comprising a exogenous gene, wherein the exogenous gene is operably linked to the promoter.

20 29. The expression vector of claim 27 wherein the promoter is selected from any one of CaMV35S, SGB6, SBMu200, MS45 or 5126.

30. The expression vector of claim 27 wherein the product of the exogenous gene disrupts the function of male tissue.

31. Plant cells comprising the vector of claim 27.

25 32. A method of mediating male fertility in a plant comprising introducing into a plant the expression vector of claim 27 wherein the exogenous gene impacts male fertility of the plant and the promoter control expression of the exogenous gene.

33. The method of claim 32 wherein the regulatory element in conjunction with the promoter is inducible.

34. A nucleotide sequence as represented in ATCC deposit no. 98931.

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